

Work Order ID 77769

December-21-11 9:29:23 AM

77769

Page 1

Item ID: D350-748-101

Accept

N900040100

Setup Start

NS1

Revision ID: U/R

Item Name: Crosstube Installation, High Fwd

Stop

NS2

Start Date: 21/12/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 13/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: M.C.J

Date: 11/12/21 Tooling:

Date:

Run Start

NR1

QC:

Date: SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D350-748-141	F U/R								

100

100

DOCUMENT CONTROL

DC

Memo

Document Control

Photocopy bluefile & type labels per PPPD350-748-101

CHG002

110

110

BENDING MACHINE - CROSSTUBES

CNC Bend I

Memo

CNC Delta 100 Bender

Bend tube as per Dwg D350-748-141 using CNC bender program D350F and Folio FT

120

120

QC15- Crosstube Dimensional Check

QC

Memo

Quality Control

0.00

SCRAP

DP

12-1-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

77769

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N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 21/12/2011 **Start Qty:** 1.00

*** 1 ***

Cust Item ID:

Required Date: 13/01/2012 **Req'd Qty:** 1.00

*** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

**Insp.
Stamp**

0.00

125

0.00

HandFXtube

Memo

Stress relief

Heat treat cross tube as per QSI010 4.3

Temp: 375

Start time: 4h30

Finish time: 8h30

QC6- Inspect dimensions to drawing

0.00

127

0.00

QC

Memo

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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N900040100

Setup Start *NS1*

Stop *NS2*

1

Cust Item ID:

*** 1 ***

Customer:

Reference:

Run Start *NR1*

Stop ***NR2***

**Insp.
Stamp**

0.00

130

Crosstubes

Memo

0.00

Crosstubes

1-Drill Tube as per Dwg D350-748-141 Using DT8876 A,B &C Drill Jigs,
Set-up drill table as per QSI 010

2-Deburr

3-Engrave Part # and Batch # as per Dwg D350-748-141

4-Remove all marks from tube within limits of D350-748-141

5- Apply a light coat of LPS3 on the interior of tube
Batch: M10 779

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.00

Quality Control

CHECK 10 DEG HOLES WITH DT8876E (EUROCOPTER CLAMP)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Stop ***NS2***

Start Date: 21/12/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 13/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Outsource process-Cadplate per QSI017 4.1.9.1	0.00							
150									
Outsource3	Memo	0.00							
Outsource process - Cad plate	Issue P/O: <u>15970</u> Stress relief at 375° for 5 hours Magnetic Particle Inspect per ASTM E1444 Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2 Embrittle relief at 375° for 8 hours, Chromate Treat Possible Supplier: Southwest United Industries Ensure Certificate of Conformity is attached								
160	Receive & Inspect for Damage & Mat'l Certs	0.00							
160									
Packaging	Memo	0.00							
Packaging	Ensure certificate of conformity is attached								
170	QC5- Inspect part completeness to step on W/O	0.00							
170									
QC	Memo	0.00							
Quality Control									

CL 12/01/25 D

Pto

Dart Aerospace Ltd

W/O:		77796						WORK ORDER CHANGES	
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector		

Part No: D32-746-101 PAR #: Fault Category: Landing gear / cross tube NCR: Yes No DQA: Date: 17/03/16
 Resolution: SCRAP Disposition: SCRAP QA: N/C Closed: Date: 12/3/16

NCR: <u>12-1254</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/3/12	# 150	tubes broke while at CAD Platform. R.C. Process.	<u> </u> 12/03/12 PST042	SCRAP + DESTROY. no repair.	MO 12/3/13	<u> </u> 12-3-13	<u> </u> 12/03/12 PST042	

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Stop ***NS2***

Start Date: 21/12/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 13/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180		0.00							
180	SprayPaint								
SprayPaint	Memo	0.00							
Spray Painting	1-Prime inside crosstube as per QSI 005 4.2 2-Prime Outside of Tube as per Dart QSI 005 4.2								
190	QC14- Inspect Spray Paint	0.00							
190									
QC	Memo	0.00							
Quality Control	Then,Wrap in plastic bag to protect from scratches								
200		0.00							
200	Crosstubes								
Crosstubes	Memo	0.00							
Crosstubes	1-Install Ground wire Insert,then insert screw and washer 2-Install Abraisin strips as per Dwg D350-748-141 & QSI 035. 3-Install supports Using Dt8876 as per Dwg D350-748-141,Torque to 60-80 IN-LBS								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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1

Cust Item ID:

Required Date: 13/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	QC5- Inspect part completeness to step on W/O	0.00							
210									
QC	Memo	0.00							
Quality Control									
220	Pick Kit	0.00							
220									
Packaging	Memo	0.00							
Packaging									
230	QC4- 100% Inspect kits for completeness	0.00							
230									
QC	Memo	0.00							
Quality Control									

12-03-13
Ø

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Stop ***NS2***

Start Date: 21/12/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 13/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240

0.00

240

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D350-748-101

Location: _____

PPP Rev: _____

250

QC21- Final Inspection - Work Order Release

0.00

250

QC

Memo

0.00

Quality Control

POSITIVE RECALL

EFFECTIVE 12-01-13 AUTH LL

RELEASED _____ DATE _____

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

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Work Order ID: 77769

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Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:A New Issue 06-07-05 JLM
IPP Rev:B Update qty of MS21042L5 06-09-12 KJ
IPP Rev:C Rev B 07-11-15 DD
IPP Rev D Combined manufacturing 08.04.02 EC verified by: DD
IPP Rev:E 08-06-24 revD as per dwg DD verified by:EC IPP Rev:F
10.08.04 added QSI010 4.3 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D350-748-141TRN		Manufactured	No			110	Each	0.0000	1	1			
D350-748-141TRN													
Crosstube Turning Detail													
ALS4-1032-225		Purchased	No			200	Each	1,348.000	1	1			
AI S4-1032-225													
Insert													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST281		1348							
				108696		199							
				110768		62							
				118386		858							
				118966		229							
AN960JD10	NAS1149D0363J	Purchased	No			200	Each	0.0000	1	1			
AN960.ID10													
Washer													
D2856-400		Manufactured	No			200	f	200.2721	1.181	1.243158			
D2856-400													
Abraison Strip													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST409		200.2721							
				63735		0.6696							
				68076		0.3149							
				71164		21.66							
				73491		177.6276							

W/O:		WORK ORDER CHANGES					
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Work Order ID: 77769

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Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

D3502-1 Manufactured No

200

Each

23.0000

2

2

D3502-1******

Support

LocationLoc QtyLoc Code

ST063

23

72129

3

73419

20

MS21920-20

Purchased No

200

Each

60.0000

2

2

MS21920-20******

Clamp (per MIL-DTL-8783C)

LocationLoc QtyLoc Code

LG050

60

116799

10

119386

50

MS27039-1-10

Purchased No

200

Each

41.0000

1

1

MS27039-1-10******

Screw

LocationLoc QtyLoc Code

ST291

41

119307

3

119531

38

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID: 77769

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Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

AN4-41A Purchased No 220 Each 285.0000 8 8

AN4-41A

Bolt

**

Location	Loc Qty	Loc Code
ST360	285	
115108	3	
115705	7	
117619	50	
117795	25	
118451	50	
118838	50	
119328	100	

AN4-6A Purchased No 220 Each 4,130.000 16 16

AN4-6A

Bolt

**

Location	Loc Qty	Loc Code
ST356	4130	
119017	4130	

AN5-32A Purchased No 220 Each 231.0000 4 4

AN5-32A

Bolt

**

Location	Loc Qty	Loc Code
ST339	231	
118422	6	
118628	50	
118983	25	
119328	100	
119862	50	

AN960JD416 NAS1149D0463J Purchased No 220 Each 0.0000 32 32

AN960JD416

Washer

**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

AN960JD516 NAS1149D0563J Purchased No

220 Each 0.0000 8 8

AN960JD516

Washer

D3500-1 Manufactured No

220 Each 4.0000 4 4

D3500-1

Saddle

Location

Loc Qty

Loc Code

ST424

4

70695

4

D3501-1 Manufactured No

220 Each 396.0000 16 16

D3501-1

Bushing

Location

Loc Qty

Loc Code

ST063

396

67757

4

70682

100

73391

85

74866

207

MS21042L4 Purchased No

220 Each 9,077.000 24 24

MS21042L4

Nut

Location

Loc Qty

Loc Code

ST300

9077

117441

51

117601

342

118451

133

119017

3551

119075

5000

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

MS21042L5

Purchased

No

220

Each

2,130.000

4

4

MS21042L5

Nut

Location

Loc Qty

Loc Code

ST300

2130

116105

5

116548

43

117611

52

118179

496

118910

34

119109

1500

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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NOTE: Date & initial all entries

DART AEROSPACE LTD

Work Order: 77769

Description: Crosstube High Fwd (AS350/355)

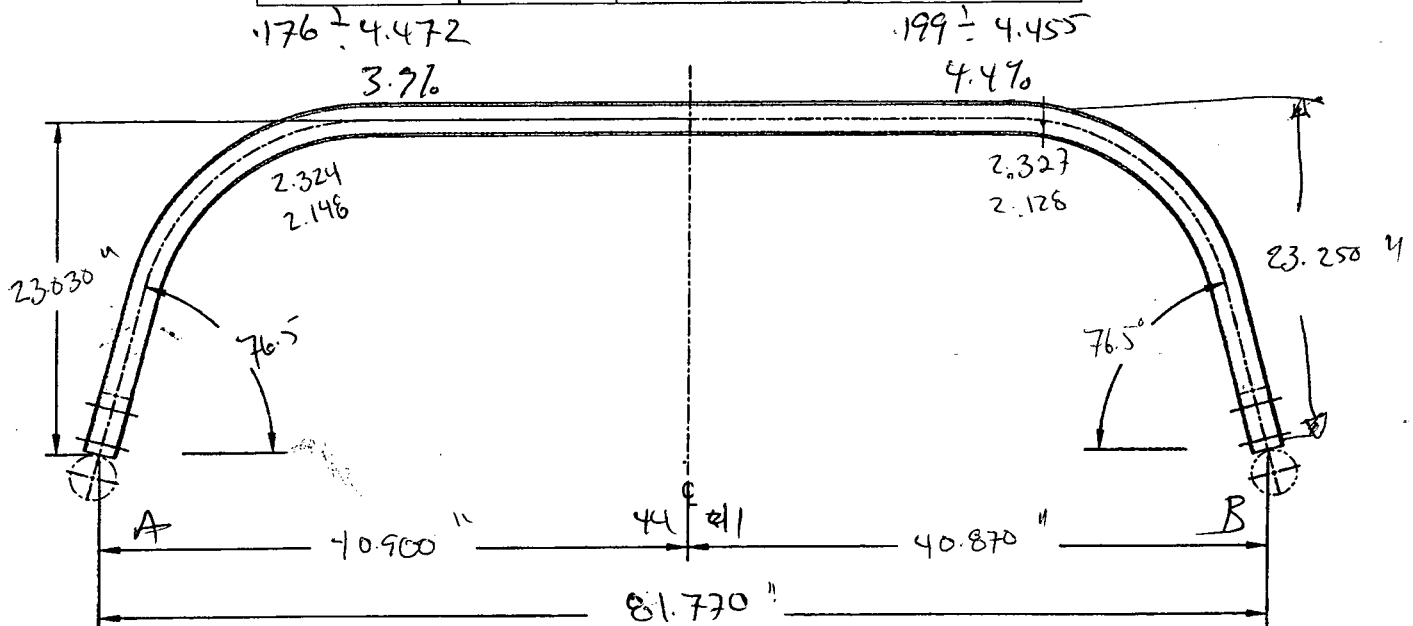
Part Number: D350-748-101

Inspection Dwg: D350-748-141

Rev: F

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Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77
Total Span	81.56	82.04



Comments

Twist = 2.320

Side A = 3.970 crush @ 44 Passes

Side B = 4.470 crush @ 41 Passes

QC15 Inspection

Date

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	10.08.23	Dwg Rev updated	KJ	
C	11.11.07	Dwg Rev updated	KJ	

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

Item	Qty -141	Part Number	Description
1	X	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
2	1	D6015-125	CROSSTUBE (OR D6017-115)
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6017-115
FINISHED LENGTH = 110.270±0.06
- 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-141" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 30.45 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO
VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.
- 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE,
CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES,
NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.
CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE
MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO
CRACKING/CHIPPING/GROOVES.
- 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT
NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN
CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 77769 M.C.J

11/12/21

UNDER REVIEW

11.07.21

RELEASED
2011-01-18

F	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	CP	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT ADD STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A6-3); TOLERANCES (ZN C6-3, D1-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6017-115 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	92	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	92		
CHECKED	92	DRAWING NO.	REV. F
MFG. APPR.	92	D350-748-141	SHEET 1 OF 4
APPROVED	92	TITLE	SCALE
DE APPR.	92	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	10.11.23	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

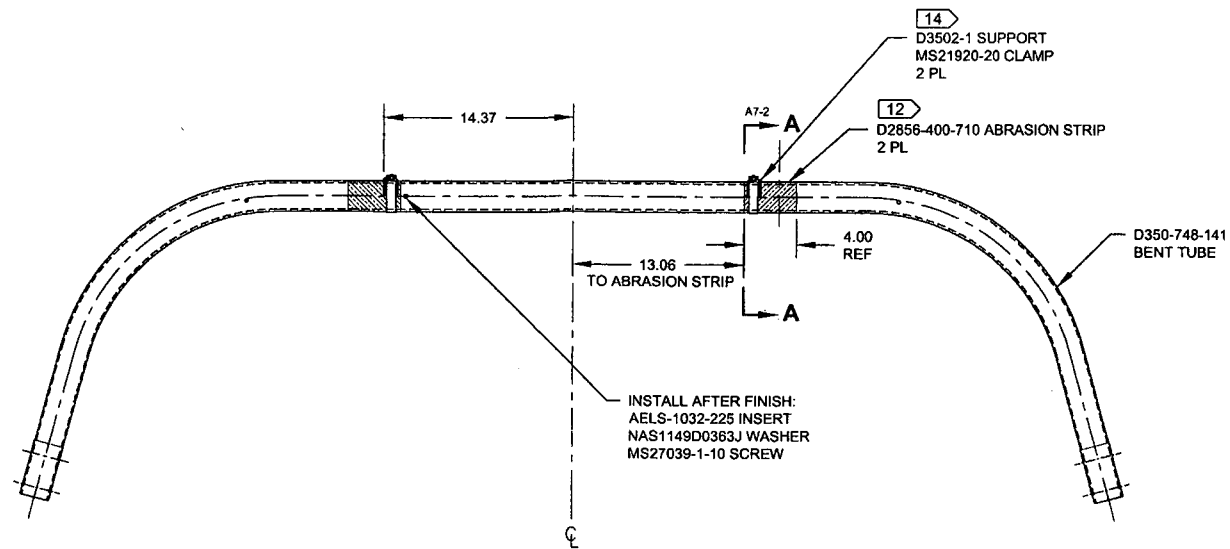
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

77769

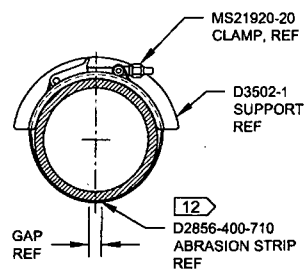


**D350-748-141
ASSEMBLY DETAIL**

UNDER REVIEW

11.07.11

RELEASED
2011-01-18



SECTION A-A D4-2
SCALE 4X

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D350-748-141	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

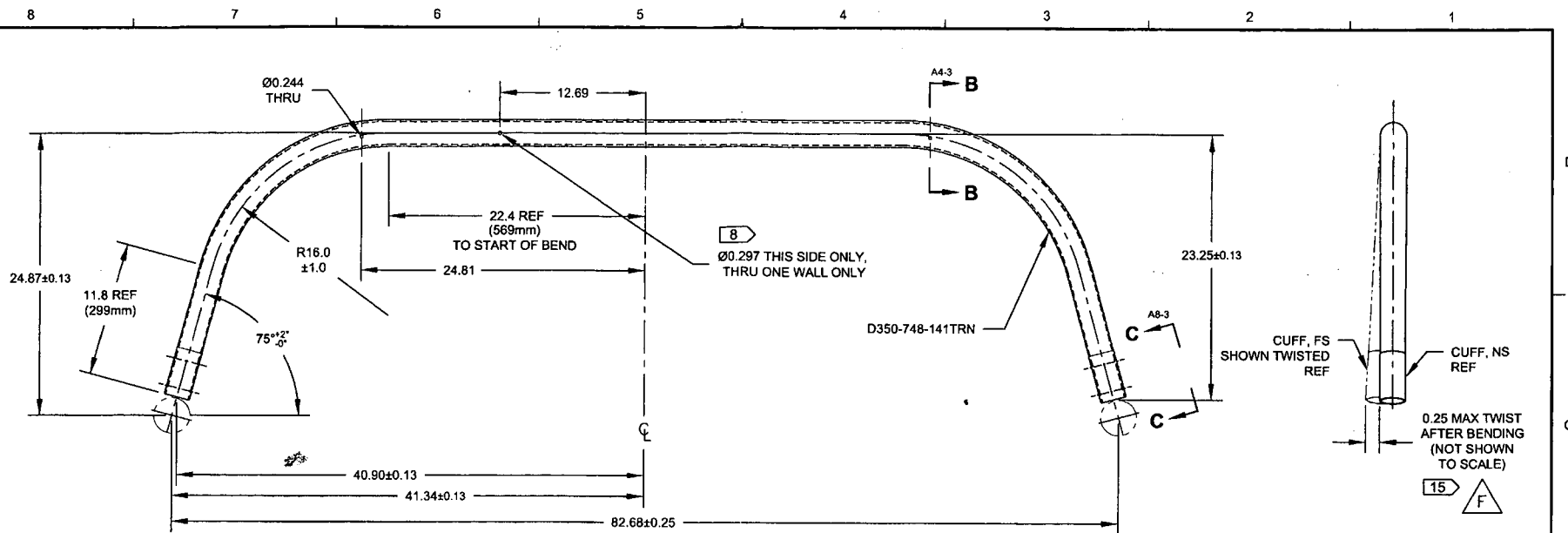
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

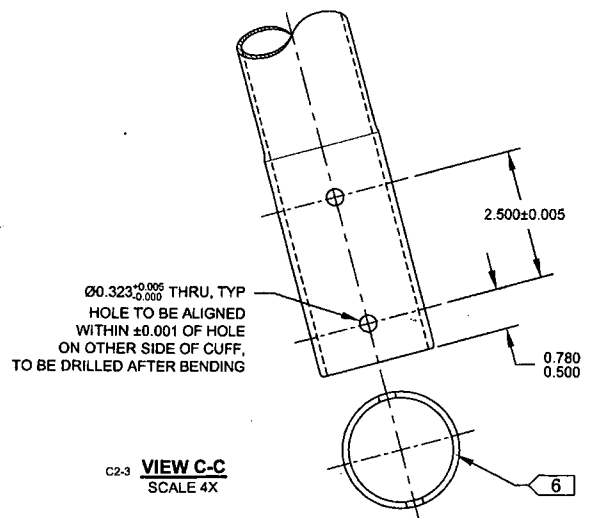
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

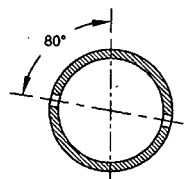
77769



D350-748-141
BENDING AND DRILLING DETAIL 10



C2-3 **VIEW C-C**
SCALE 4X



SECTION B-B D3-3
SCALE 4X

UNDER REVIEW
11.27.12

RELEASED
2011-01-18
MD

DESIGN	JP	DART AEROSPACE LTD	
DRAWN	JP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	JP	DRAWING NO.	REV. F
MFG. APPR.	JP	D350-748-141	SHEET 3 OF 4
APPROVED	JP	TITLE	SCALE
DE APPR.	JP	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	10.11.23	<small>COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

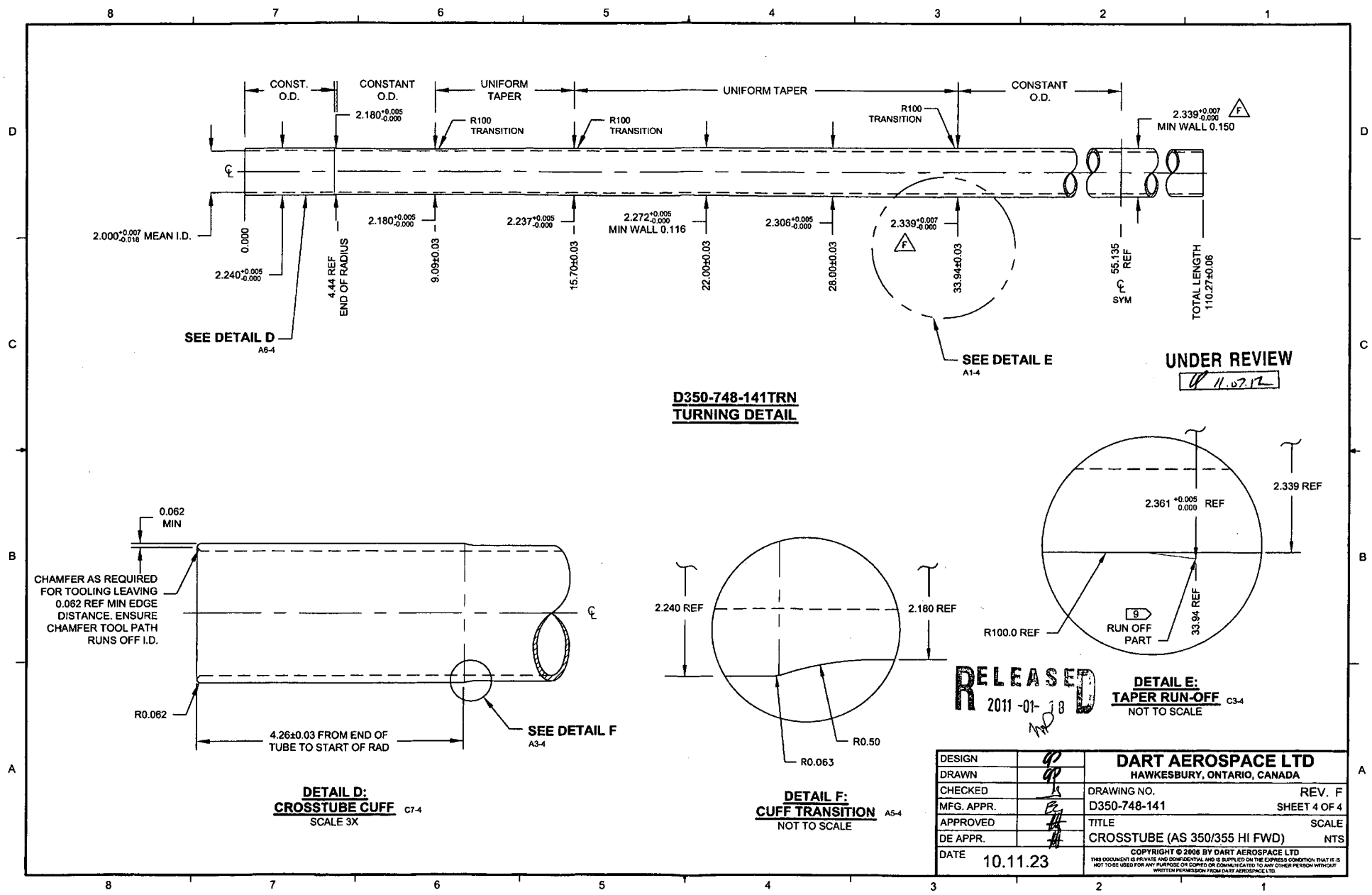
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

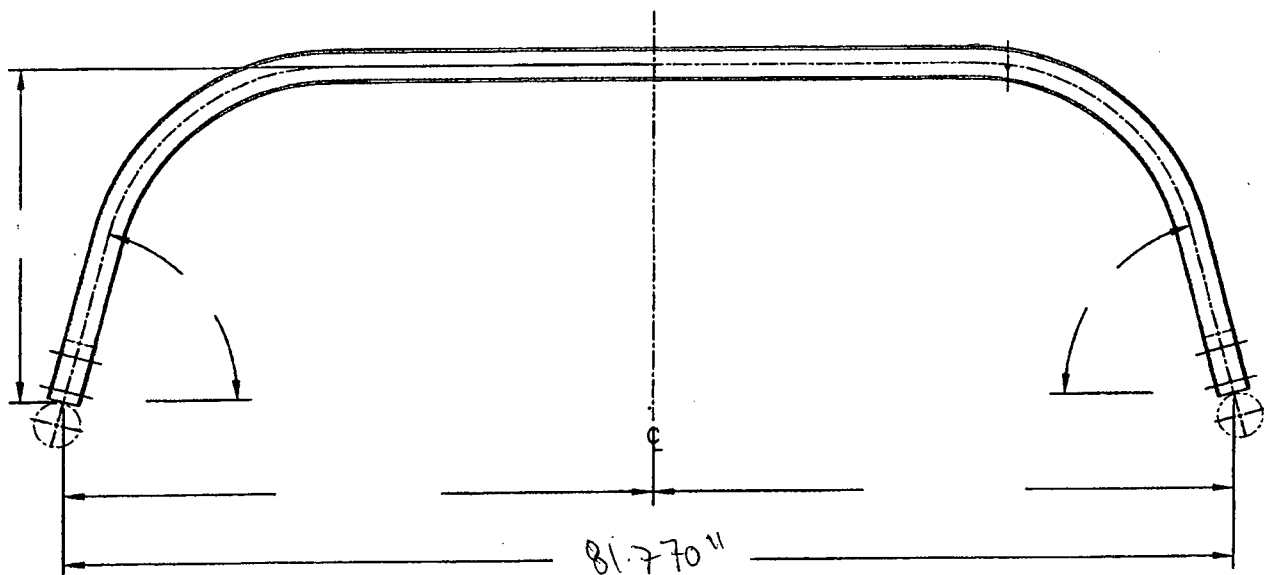
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 77769
Description: Crosstube High Fwd (AS350/355)	Part Number: D350-748-101
Inspection Dwg: D350-748-141 Rev: F	Page 1 of 1

For stress Rel

Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77
Total Span	81.56	82.04



Comments
twist = 0.315"

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	10.08.23	Dwg Rev updated	KJ	
C	11.11.07	Dwg Rev updated	KJ	

00104

81 3041

CADORATH GROUP
NON CONFORMANCE REPORT

CADORATH AEROSPACE ☐

CADORATH DISTRIBUTION ☐

CADORATH COATING ☒

UNIFLYTE ☐

NOTE: THIS FORM MUST BE COMPLETED BY: CUSTOMER ☒ VENDOR ☐ BEFORE PROCESSING OF PART(S)

NCR#: **C1115**

CUSTOMER: ☒ **Dart Aerospace Ltd.**

DATE: **02/24/12**

VENDOR: ☐ **N/A**

CADORATH/UNIFLYTE P/O #:

N/A

PART DESCRIPTION: **Skid (Crosstube)**

CADORATH/UNIFLYTE W/O #:

111679/80/81/82/86

CUSTOMER P/O #: **PO 15990**

PART #: **D350-748-101**

SERIAL #: **77767, 77768, 77769, 77770 and 76254** QUANTITY: **Five (5)**

PURCHASE ORDER INSTRUCTIONS: **MPI and Cad Plate**

DISCREPANCY: **These parts failed our MPI test after plating. They all have cracks. The parts were shipped back to your facility as of February 24, 2012.**

Nick Wasylik (QA Manager)

CADORATH/UNIFLYTE INSPECTION DEPARTMENT

CI
14

02/29/12

CUSTOMER: ☒

VENDOR: ☐

PLEASE COMPLETE THIS PORTION, SIGN AND RETURN TOP COPY OF THIS FORM TO CADORATH/UNIFLYTE

DATE: **02/24/12**

P/O: **PO 15990**

CUSTOMER INSTRUCTIONS: ☐

VENDOR CORRECTIVE ACTION: ☐

ATTENTION: Chantal Lavoie

Since the 5 parts were returned, this NCR is the notification that they were sent back for your evaluation.

On your behalf,

AUTHORIZED SIGNATURE

CI
14

02/29/12

Nick Wasylik (QA Manager)

NAME AND TITLE

DATE: 10/13/10

FORM: OPS 097
REVISION: 3

